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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,632	04/06/2001	Yhean-Sen Lai	LAI 19	7465

7590 11/19/2004

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EXAMINER	
HAILE, FEBEN	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,632	LAI, YHEAN-SEN	
	Examiner	Art Unit	
	Feben M Haile	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-22* is/are allowed.

6)☒ Claim(s) *1 and 23* is/are rejected.

7)☒ Claim(s) *2-11 & 24-26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "551". On page 27 of the specification, a "signal line" is designated by the reference character "511" but figure 5 of the drawings does not show a "signal line" with the reference character "511". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 27 of the specification, the "robbed bit detector" block is referenced by the character "531" but figure 5 of the drawings designates the "robbed bit detector" block with the reference character "537". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Abdelilah et al (herein referred to as Abdelilah).

Regarding claim 1, Abdelilah discloses a method that can identify robbed bit signal (RBS) and PAD impairments (echoes) in a plurality of sets of digital impairment learning (DIL) signals (training signals) transmitted from a server modem to a client modem (remote device) during DIL intervals (see column 5 lines 19-24) using a flowchart illustrating how to identify the robbed bit signal (RBS) and PAD impairments (see figure 5, and see column 11 lines 58-62) by: (1) identifying one of the DIL intervals (portion of training signal) that contains DIL signals not subject to RBS (step 510 figure 5 and see column 11 lines 63-65), (2) determining PAD levels (echo amplitudes) for the non-RBS DIL interval (step 520 of figure 5 and see column 11-12 lines 66-1), and (3) identifying RBS type for the DIL signals in the remaining DIL intervals using the determined PAD information (step 530 of figure 5 and see column 12 lines 3-6). The identification of this RBS type in the DIL intervals can be added to the DIL signals that

are transmitted from a server modem to a client modem (signal indicating location of RBS).

Regarding claim 23, Abdelilah discloses a system that can identify robbed bit signal (RBS) and PAD impairments (echoes) in a plurality of sets of digital impairment learning (DIL) signals (training signals) transmitted from a server modem to a client modem (remote device) during DIL intervals (see column 5 lines 19-24) including: (1) a server modem (training signal generator) transmitting DIL signals to a client modem (see column 4 lines 45-49), (2) a processor (transmitter) in the client modem that can transmit information (training signals) to external devices via a communication interface (unit 134 of figure 3 and see column 8 lines 25-26), and (3) a startup program (unit 168 of figure 3) that includes a equalizer and echo canceller training and DIL (unit 176 of figure 3) where RBS and PAD digital impairments of DIL intervals are identified (level adapter and robbed bit detector) (see column 4 lines 42-54). The identification of the RBS type, using the PAD information, in the DIL intervals can be added to the DIL signals that are transmitted from the server modem to the client modem (signal indicating location of RBS).

Allowable Subject Matter

4. Claims 12-22 allowed.

5. Claims 2-11 and 24-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Regarding claim 2, the prior art fails to teach the limitation "wherein said network inserts said robbed bits into the least significant bit position of one of said samples at a known interval of every m samples, where m is an integer, and said amplitudes are determined on a modulo m basis".

Regarding claim 12, the prior art fails to teach the limitation "generating from said delayed and robbed bit compensated signal on said path an echo cancellation signal and subtracting said echo cancellation signal from signals received via said network before reception at said receiver".

Regarding claim 24, the prior art fails to teach the limitation "wherein said level adapter generates said level adapter signal, H(n), from said error signal and said modulo reference signal, said level adapter signal comprising a plurality of amplitude values, each corresponding to a portion of said error signal, e(n), said amplitude values being indicative of the existence of a robbed bit in said portion of said error signal".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Betts et al. (US 5,729,226), Rob Bit Compensation System and Method Associated with a Transmitter or Codec

b) Betts et al. (US 5,761,247), Rob Bit Compensation System and Method Associated with a Receiver or Codec

c) Demjanenko et al. (US 6,643,270), Method of Compensating for Systemic Impairments in a Telecommunications Network

d) Goldstein et al. (US 6,002,713), PCM Modem Equalizer with Adaptive Compensation for Robbed Bit Signaling

e) Kim (US 6,201,842), Device and Method for Detecting PCM Upstream Digital Impairments in a Communication Network

f) Nicholas (US 6,212,207), Robbed Bit Signal Detection and Compensation

g) Norrell et al. (US 6,115,395), Method of Detecting Network Impairments for High Speed Data Communication Over Conventional Subscriber Lines

h) Scull et al. (US 6,108,354), System, Device, and Method for Detecting and Characterizing Impairments in a Communication Network

i) Sridhar et al. (US 5,007,047), Adaptive Rate Control for Echo Cancelling Modem

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Feben M Haile whose telephone number is (571) 272-3072. The examiner can normally be reached on 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RICKY NGO
PRIMARY EXAMINER
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